

## Graphing Inequalities:

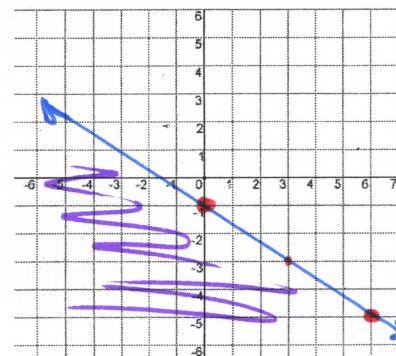
- Determine whether line is solid ( $\leq, \geq$ ) or dashed ( $<, >$ )
- Put in "y =" form to determine if shading is above ( $y >$ ) or below ( $y <$ )

Example: Graph the inequality:  $2x + 3y \leq -3$ 

$$y \leq -\frac{2}{3}x - 1$$

$$m = -\frac{2}{3}$$

$$b = -1$$

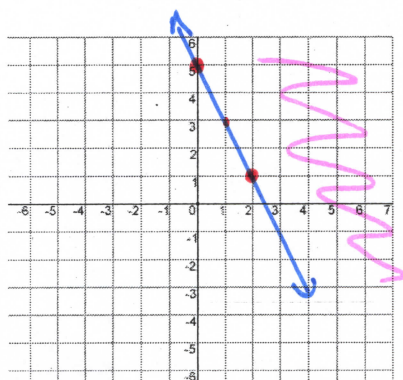


**Graph each linear inequality:** a) Solve for y (if necessary). b) Determine if boundary is solid or dashed then graph. c) Shade above or below (check with a point in (true) or out (false) of shaded region).

1)  $y \geq -2x + 5$

$$m = -\frac{2}{1}$$

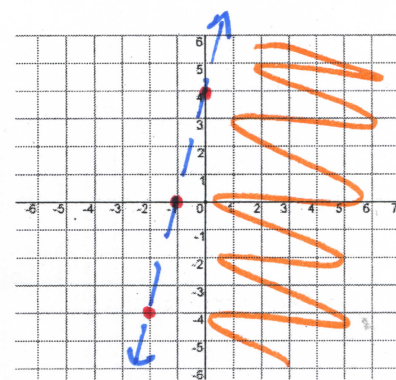
$$b = 5$$



2)  $y < 4x + 4$

$$m = \frac{4}{1}$$

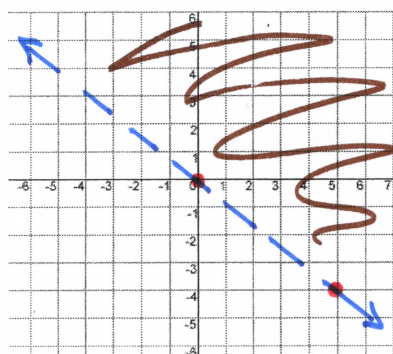
$$b = 4$$



3)  $y > -\frac{4}{5}x$

$$m = -\frac{4}{5}$$

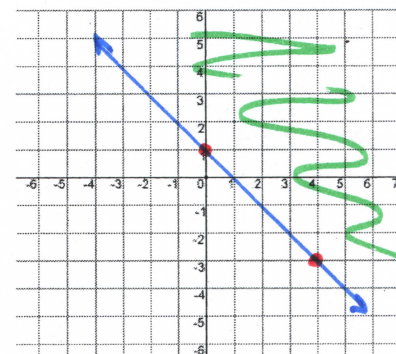
$$b = 0$$



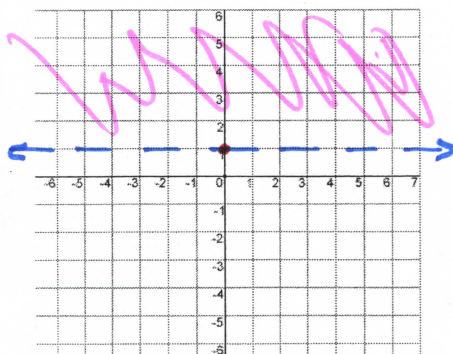
4)  $y \geq -x + 1$

$$m = -\frac{1}{1}$$

$$b = 1$$



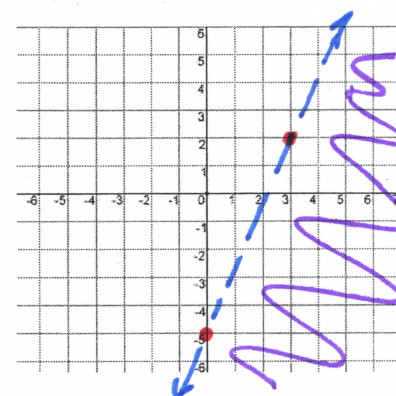
5)  $y > 1$



6)  $y < \frac{7}{3}x - 5$

$$m = \frac{7}{3}$$

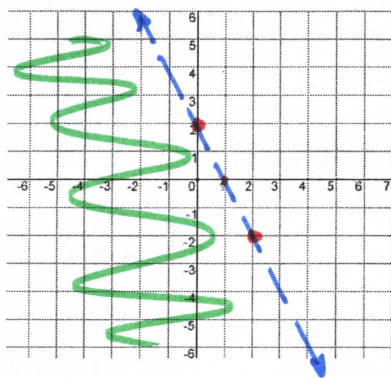
$$b = -5$$



7)  $y < -2x + 2$

$m = -\frac{2}{1}$

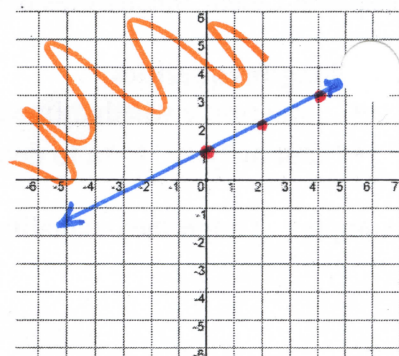
$b = 2$



8)  $y \geq \frac{1}{2}x + 1$

$m = \frac{1}{2}$

$b = 1$



9)  $3x - y \geq 5$

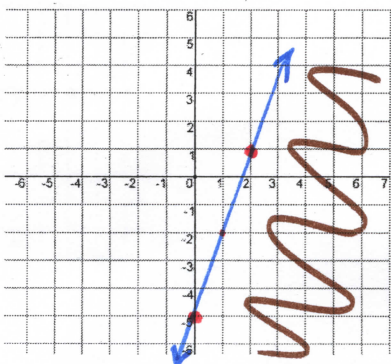
$$\begin{array}{r} -3x \quad -3x \\ -y \geq -3x + 5 \\ \hline -1 \quad -1 \quad -1 \end{array}$$

FLIP IT

$y \leq 3x - 5$

$m = \frac{3}{1}$

$b = -5$



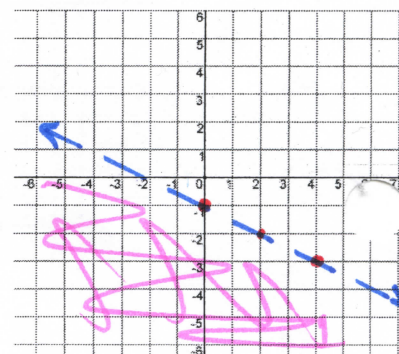
10)  $x + 2y < -2$

$$\begin{array}{r} -x \quad +x \\ 2y < -x - 2 \\ \hline \frac{2}{2} \quad \frac{-x}{2} \quad \frac{-2}{2} \end{array}$$

$y < -\frac{1}{2}x - 1$

$m = -\frac{1}{2}$

$b = -1$

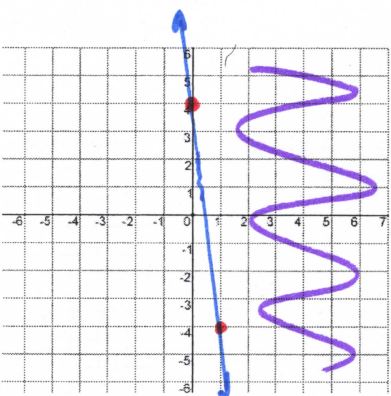


11)  $8x + y \geq 4$

$$\begin{array}{r} -8x \quad -8x \\ y \geq -8x + 4 \\ \hline \end{array}$$

$m = -\frac{8}{1}$

$b = 4$



12)  $x - 3y < -9$

$$\begin{array}{r} -x \quad -x \\ -3y < -x - 9 \\ \hline -3 \quad -3 \quad -3 \end{array}$$

FLIP IT

$y > \frac{1}{3}x + 3$

$m = \frac{1}{3}$

$b = 3$

